

LISTING OF AND AMENDMENTS TO CLAIMS:

1. (currently amended) A composite asymmetric microfilter structure comprising at least one separation membrane, the at least one separation membrane comprising a spin-on glass selected from the group consisting of siloxanes, silsesquioxanes, N-silsesquioxanes, and polycabosilanes, atop a support membrane, the support membrane being selected from the group consisting of silicon, silicon dioxide, silicon nitride, germanium and any combination thereof.
2. (currently amended) The structure recited in claim 1, wherein the at least one separation membrane further comprises an inorganic material.
3. (original) The structure recited in claim 2, wherein the inorganic material comprises an inorganic membrane material that will cleanly and efficiently transmit a permeate to a support layer.
4. (original) The structure recited in claim 3, wherein the inorganic membrane material is selected from the group consisting of silicon, silicon dioxide, zeolite and any combination thereof.
5. (currently amended) The structure recited in claim 1, wherein the at least one of the at least one separation membrane further comprises an organic material.

6. (original) The structure recited in claim 5, wherein the organic material is a thermoplastic polymer.

7. (original) The structure recited in claim 5, wherein the organic material comprises a polymer that will cleanly and efficiently transmit a permeate to a support layer

8. (original) The structure recited in claim 6, wherein the thermoplastic polymer is selected from the group consisting of polyimide, SiLK, polysulfone, and polyethersulfone.

9. (original) An array comprising a plurality of the composite microfilter structure recited in claim 1.

10. (currently amended) The structure recited in claim 1, wherein the support membrane comprises a porous silicon wafer ~~of dimensions standard in the microelectronics industry.~~

11. (currently amended) The structure recited in claim 1, wherein the separation membrane is about 1 μm thick or less.

12. (original) The structure recited in claim 1, wherein the separation membrane is lithographically patterned with a plurality of micropores therethrough.

13. (original) The structure recited in claim 12 wherein the support membrane is provided with a plurality of micropores therethrough having broader average diameter

than the plurality of micropores of the separation membrane.

14. - 24. (canceled)

25. (currently amended) The structure recited in claim 27 [[1]], wherein the at least one of the at least one separation membrane comprises a spin-on glass.

26. The structure in claim 25, wherein the spin glass is selected from the group consisting of siloxanes, silsesquioxanes, N-silsesquioxanes, and polycabosilanes.

27. (new) A composite asymmetric microfilter structure comprising at least one separation membrane atop a support membrane, the support membrane being formed of silicon.

28. (new) The structure recited in claim 27, wherein the at least one separation membrane further comprises an inorganic material.

29. (new) The structure recited in claim 28, wherein the inorganic material comprises an inorganic membrane material selected from the group consisting of silicon, silicon dioxide, zeolite and any combination thereof.

30. (new) The structure recited in claim 27, wherein at least one of the at least one separation membrane further comprises an organic material.

31. (new) The structure recited in claim 30, wherein the organic material is a thermoplastic polymer.

32. (new) The structure recited in claim 30, wherein the organic material comprises a polymer that will cleanly and efficiently transmit a permeate to a support layer

33. (new) The structure recited in claim 31, wherein the thermoplastic polymer is selected from the group consisting of polyimide, SiLK, polysulfone, and polyethersulfone.

34. (new) An array comprising a plurality of the composite microfilter structure recited in claim 27.

35. (new) The structure recited in claim 27, wherein the support membrane comprises a porous silicon wafer.

36. (new) The structure recited in claim 27, wherein the separation membrane is about 1 μm thick.

37. (new) The structure recited in claim 27, wherein the separation membrane is lithographically patterned with a plurality of micropores therethrough.